Liability of Foreignness in Capital Markets:
Institutional Distance and the Cost of Debt

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Abstract

We extend the domain of liability of foreignness (LOF) research to capital markets and evaluate whether firms incur LOF when attempting to raise debt capital abroad. We rely upon multiple conceptualizations of institutional distance to capture the extent to which distance may contribute to LOF in capital markets. Based on a sample of 361 firms from 45 countries over a 24 year time period, we find that institutional distances lead to increased cost of debt. More importantly, we find that frequency of foreign bond issuance helps to mitigate the LOF. We conclude with a discussion of our results and their implications for future research on understanding how firms address LOF when sourcing debt abroad.

Key Words: foreign bonds, liability of foreignness, institutional distance

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1. Introduction

Global capital market integration in the last two decades has had a profound impact on the strategies of firms accessing capital resources. While considerable research has focused on the challenges that firms face when raising equity capital abroad, the largest component of the international capital market is the bond market (Lau and Yu, 2009). In fact, between 1991-2005, 35% of all capital raised through debt issues was raised in markets other than the firm's home market (Gozzi, Levine, and Schmukler, 2010, Chaplinsky and Ramchand, 2004). Yet, little attention has been devoted to understanding problems firms face when attempting to issue bonds in foreign markets.

There has been considerable research in the field of International Business (IB) on the additional costs that a firm faces while entering and operating in foreign markets. These additional costs that a local firm would not incur are referred to as liabilities of foreignness (LOF) (Zaheer, 1995). LOF is considered as the "fundamental assumption driving theories of the multinational enterprise" (Zaheer, 1995: 341) and is often treated as a "taken-for-granted assumption" (Zaheer, 2002) in the international management literature. To date, much of LOF research has focused on firms expanding their products, services, and operations to foreign countries to support their global expansion. However, the increasing integration of capital markets adds a new dimension to internationalization (Bell, Filatotchev, and Rasheed, 2012).

The implications of the globalization of capital markets for firm strategies have emerged as an important topic of theoretical and empirical inquiry in IB and finance literatures in recent years (Filatotchev, Bell, and Rasheed, 2016). The choice of where and how to access capital

involves a multitude of considerations beyond simple cost comparisons. For example, prior research shows that capital market choices have product market implications and vice versa (Frieder and Subrahmanyan, 2005; Keloharju, Knüpfer, and Linnainmaa, 2012). Further, Moore, Bell, Filatotchev, and Rasheed (2012)'s examination of foreign IPOs demonstrate that capital market choice by firms is influenced by institutional considerations. It is equally plausible that the role of institutional factors is not restricted to equity markets and extends to debt markets as well.

Theoretically, both equity and debt involve agency costs associated with monitoring, enforcing, and constraining decisions (Jensen and Meckling, 1976). Research in finance has explored the existence of stockholder-bondholder conflicts (Klock, Mansi, and Maxwell, 2005) which primarily manifest in terms of wealth appropriation and risk shifting. Unlike stockholders, bondholders have no voting rights but can still exercise control through monitoring and restrictive covenants. In countries like Japan and Germany, the monitoring function is predominantly carried out by debtholders (i.e., banks). Clearly, the choice of capital structure has important governance implications. Comparative corporate governance research suggests that governance practices are "embedded" within the wider context of formal and informal institutions, such as laws, regulations, and cognitive expectations of the governance participants (Bell, Filatotchev, and Aguilera, 2014; Cumming, Filatotchev, Knill, Reeb, and Senbet, 2017). Therefore, it seems reasonable to conclude that the institutional differences between the firm's home country and host capital markets also have governance implications given that agency costs and governance properties of debt may vary across different capital markets.

Our study integrates corporate finance research with IB studies and makes three important contributions. First, this paper extends the domain of LOF research to capital markets and

addresses the question whether firms incur LOF when attempting to raise debt capital abroad. We explore how bond investors in the host country may be affected by the "liability of foreign governance" associated with the firm's home country. Second, we take an important step by investigating LOF in terms of its comparative, multi-country dimensions by investigating whether LOF is also a function of institutional distance between the firm's home country and the host capital market. Our key argument here is that, other things being equal, differences in macro-level, socio-economic environments in home and host countries affect the extent of the firm's LOF even in the situations when fix-claim investors have fairly comprehensive understanding of the firm's business model and the associated growth prospects. Third, we contribute to the understanding of economic significance of socio-economic distance by differentiating among the effects of various dimensions of institutional distance between the firm's home and host markets in the context of international debt markets. To our knowledge, this is the first study in IB and finance areas that provides a comprehensive empirical exploration of the effects of different types of institutional distance on the costs of capital in global bond markets. We conclude with a discussion of our results and their implications for future research on understanding how firms address LOF when sourcing capital abroad.

2. Theory and literature review

2.1 Liability of foreignness

Our analysis follows two fundamental assumptions based on prior research in IB. First, firms doing business outside their home country may be at a disadvantage due to LOF. Second, LOF may be a function of the distance between the firm's home country and the host market. Therefore, in this section, we present an overview of the extant literature on LOF as well as the concept of distance in IB research.

Zaheer (1995: 343) defines LOF as "all additional costs a firm operating in a market overseas incurs that a local firm would not incur." The focus of LOF is on the "social costs of access and acceptance" (Zaheer, 2002: 352). These costs could either be structural/relational or institutional. Structural/relational costs arise from a foreign firm's network position in the host country and its linkages to important local actors. Most likely, a local firm would incur less of these costs because it has better developed local networks. Institutional costs arise from institutional differences between the home and host countries, and higher the institutional distance the lower the legitimacy of the foreign firm among local investors.

The cumulative empirical evidence of prior research implies that, at least among firms competing in the product market domain, foreign-owned firms are expected to have lower profitability and a lower survival rate than local firms, *ceteris paribus* (see, e.g., Lord and Ranft, 2000; Zaheer, 1995; Zaheer and Mosakowski, 1997). The collective evidence also suggests that LOF is prevalent across a wide range of product and service-related industries such as banking, automobiles, and currency trading (DeYoung and Nolle, 1996; Mezias, 2002a, 2002b; Miller and Parkhe, 2002; Miller and Richards, 2002; Sofka and Zimmermann, 2008) and that LOF has a negative impact on firm performance (DeYoung and Nolle, 1996; Hasan and Hunter, 1996; Miller and Parkhe, 2002; Sofka and Zimmermann, 2005; Zaheer, 1995; Zaheer and Mosakowski, 1997).

The strategies firms pursue in the product market domain are among the most important decisions that a firm will make. However, firms often need external financial resources in order to capitalize on growth opportunities provided by their chosen product markets. The increasing integration of global capital markets in recent decades has made it easier for firms to raise capital in foreign markets. The main emphasis of prior research was on foreign equity markets. For

example, a successful listing abroad can enhance foreign operations or sales, enhance analyst coverage, and provide firms with larger amounts of capital in order to pursue growth and acquisition strategies (Karolyi, 2006). Listing in a foreign market can also result in access to more liquid markets, financing at lower costs and better terms, and a wider investor base than they would have in their home capital market (Claessens, and Schmukler, 2007). On the other hand, firms raising equity in a host country capital market may have to "underprice" their shares (Boulton, Smart, and Zutter, 2010). It has also been found that they pay higher underwriting and professional fees, or higher initial listing fees than local firms. For example, Bronson, Ghosh, and Hogan (2009) found that audit fees for firms cross-listed in the U.S. are 23% higher than those for U.S. firms. Foreign firms experience difficulties in making themselves known to local investors (Bruner, Chaplinsky, and Ramchand, 2004). In addition, foreign firms are subject to a greater frequency of lawsuits than local firms (Bhattacharya, Galpin, and Haslem, 2007). Even more compelling evidence of LOF in capital markets comes from a study by Frésard and Salva (2010) who found that "the value of foreign firms with shares cross-listed on U.S. exchanges is around 14% lower than that of similar U.S. firms" (Frésard and Salva (2010: 2).

There has been little research about the challenges faced by firms attempting to raise debt in foreign capital markets even though the largest component of the international capital market is the bond market (Chaplinsky and Ramchand, 2004; Lau and Yu, 2009). Recent research suggests that foreign firms are at a disadvantage compared to local firms in foreign debt markets. A growing body of research in finance demonstrates that foreign firms encounter "home bias" in capital markets (French and Porterba, 1991), a bias that is prevalent in both equity and debt markets. That is, investors typically prefer to hold domestic securities rather than equity or debt instruments issued by firms outside of their home countries. The prevalence of home bias in

debt markets is well documented (Fidora, Fratzscher, and Thimann 2006; Burger and Warnock 2003, 2004; Lane, 2005; Bekaert and Harvey, 2003; Tesar and Werner, 1995). With respect to LOF, research shows that cross-listed bonds have lower initial ratings, are less likely to be upgraded, and take longer to be upgraded compared to U.S. domestic bonds with similar issuer and issue characteristics (Atilgan, Ghosh, and Zhang, 2010). Given the evidence in prior literature about the disadvantages faced by firms in foreign capital markets, it is important to systematically identify macro-institutional sources of these disadvantages.

2.2 Institutional distance and liabilities of foreignness

Foreign issuers of bonds are coming from home countries that represent a wide diversity of economic, cultural and legal institutions. Many of them would be very different to institutions operating in their target capital markets. How does institutional distance between the firm's home and host countries affect LOF among firms competing in international debt markets? Hymer (1976) noted that liability of foreignness increases with the distance between the home and the host countries. Bell et al., (2012) in their study of LOF in capital markets identified institutional distance and cultural distance as two potential sources of LOF. Institutional distance is defined as the extent of differences in institutions between countries (Xu and Shenkar, 2002). Berry, Guillen and Zhou (2010) proposed a comprehensive set of nine dimensions along which cross-national distance can be based on three distinct conceptualizations of cross-national institutions. They argue that countries differ in terms of national business systems (Whitley, 1992), governance (Kester, 1996), and innovation systems (Nelson and Rosenberg, 1993).

We argue that institutional distance affects the LOF firms face when attempting to access international debt markets. From the corporate governance perspective, when investors perceive that the risks and costs of acquiring and holding securities issued by foreign firms are higher than

they are for local securities, they are likely to prefer local securities and price-protect themselves against risks of holding foreign securities by putting a discount on their value (Bell, Filatotchev, and Aguilera, 2014). Apart from being related to the firm's economic fundamentals, such as leverage, performance, industry affiliation etc., these risks and costs are also associated with corporate governance environment within which the foreign firm operates. The investors' perceptions of the firm's LOF affect both their expectations of the probability of default and how much can be recovered in case of default. We contend that these perceptions are mostly attributed to institutional differences between home and host country capital markets. For example, these differences typically relate to factors such as protections afforded to minority investors and debtholders, taxation, and informal institutional settings in the home country, such as the level of corruption, and the importance of informal networks. Investors would expect to be compensated for their higher risk through higher returns which in turn increases LOF for foreign issuers. An important insight from prior studies is that there are different types of institutional distance and that the underlying socio-economic mechanism linking a particular distance with firm-level outcomes are theoretically different. This clearly suggests the need to fully acknowledge the multidimensionality of institutional distance and therefore the theoretical imperative to investigate their effects separately.

There has been a growing recognition that culture affects both economic exchange and outcomes by affecting expectations and preferences (Barro and McCleary, 2003; Guiso, Sapienza, and Zingales, 2005, 2006, 2008, 2009; Fernandez and Fogli, 2007; Tabellini, 2007, 2008; Zingales, 2015). Culture affects the level of trust and nature of financial contracting, two core pillars of corporate governance. For example, Grinblatt and Keloharju (2000) found that investors are more likely to hold, buy, and sell the stocks of firms that are located close to the

investor. More recently, Guiso, Sapienza, and Zingales (2008) found that trust is related to amount of trade, portfolio investment, and direct investment. Zhu and Cai (2014) found that greater cultural differences between U.S. investors and foreign issuers increase the cost of debt. Beugelsdijk and Frijns (2010) found that more uncertainty avoiding societies are associated with lower levels of foreign equity investment and that societies with higher levels of individualism invest more in foreign equities. Cultural differences are related to trading activity levels and security pricing (Chui, Titman, and Wei, 2010).

In a similar vein, there is considerable variation across countries in terms of their ability to innovate and create new knowledge. Knowledge distance refers to how large a gap exists between the source and the recipient in terms of their knowledge bases. Knowledge distance is closely related to cognitive distance (e.g., Berry, Guillen, and Zhou, 2010). There is increasing attention to research on national innovation systems (Nelson and Rosenberg, 1993). It is likely that investors will view firms from nations with better innovation systems as having greater growth potential both because of their ability to innovate and because of knowledge spillovers occurring in their economies. Clearly, culture and knowledge distances do affect investor behavior and they might work against a firm that is accessing foreign capital markets. Hence, we expect that both cultural and knowledge distances between the firm's home and host countries should increase LOFs it faces in the global debt markets.

Further, economic and financial macro-institutional factors have been used in IB finance research as key drivers of investment transactions and the associated corporate governance processes (Cumming et al., 2017; La Porta et al., 1998; Zaheer and Zaheer, 1997). Economic distance is exhibited in differences in wealth/income between countries, along with differences in costs and quality of factors of production (Ghemawat, 2001). The smaller the economic

distance between the home and host countries, the more similar the countries are in terms of their income and wealth profiles, and thus the more alike they should be in their investment preferences, according to the country similarity theory in international economics (Linder, 1961). Economic similarity is reflected in commonality in the attitudes and lifestyles of consumers and investors (Hewitt, Roth, and Roth, 2003). While economic distance focuses on differences in factors such as income levels and inflation rates, financial distance looks at differences in equity and credit markets. The more proximate or similar a country is in terms of economic and financial institutional factors, investors in the host market are likely to view it as less foreign. Therefore, we expect that economic and financial distances will have effects of the firm's LOF in the global bond markets similar to cultural and knowledge distances.

Finally, regulatory/administrative distance between home and host countries refers to differences in countries' rules, laws and regulations, including governance and its enforcement mechanisms (Ghemawat 2001; Kaufmann et al., 2006). When two countries share the same legal system, this makes them relatively close in administrative distance. However, overcoming administrative distance is also about learning to deal with the institutions and legal systems in the host country (Gooderham, Gooderham, and Grøogaard, 2013). Significant dissimilarities may intensify difficulties of foreign firms raising debt resources in a host market because differing levels of rule of law may entail unfamiliar prescriptions as to what constitutes legitimate action in a foreign environment (Denk et al., 2012; Oxley and Yeung, 2001; White et al., 2013). Hence, investors are more likely to invest in the securities issued by a company that hails from a country that has a common administrative heritage and thus proximate in terms of administrative distance. Again, regulatory/administrative proximity is expected to reduce the firm's LOF in the foreign debt market.

Our previous arguments are related to a theoretical link between the firm's LOF and risks and uncertainties associated with different types of institutional distance. However, within the context of repeated game, governance problems can be mitigated by increasing mutual understanding and trust among players. Eden and Miller (2004) point out that social costs arise from *unfamiliarity, relational, and discriminatory* hazards. Unfamiliarity can be seen as a two-sided phenomenon. That is, a firm may lack knowledge of or experience in the host country. Similarly, investors in the host market may be unfamiliar with the firm trying to raise capital. As a firm repeatedly access a capital market, these unfamiliarity hazards are likely to diminish over time. A similar logic applies to relational hazards as well. With repeated efforts to access capital in a foreign market, the firm develops closer relationships with capital market participants such as investors, underwriters, law firms, and banks thereby reducing relational hazards. Discrimination hazards primarily arise from legitimacy deficit (Schmidt and Sofka, 2009). Continued presence in a host capital market and a history of meeting its financial obligations will result in an increase in legitimacy and reduce discrimination hazards as the firm increasingly gains insider status. Thus, we expect the firm's cost of capital when approaching a foreign debt market will be related, *ceteris paribus*, to a complex interplay between macro-institutional factors associated with its home and host countries and the extent of trust and familiarity associated with repeated bond issues in the same foreign market.

3. Sample, research design, and variable measurement

3.1 Sample

We collected foreign debt issuance data from Securities Data Company's (Thomson Reuters SDC) New Issues Database. The sample period covers foreign debt issued between January 1991 and December 2014. The data covers the maturity, bond issue size, coupon rate, yield to

maturity, treasury yield, yield spread to the benchmark, and credit ratings of the issue, etc. We omitted debt issues with less than one-year maturities.

All the observations obtained from SDC as foreign or domestic bond are based on destination market's nationality such as Yankee bonds (US), Bulldog bonds (UK), Samurai bonds (Japan), Kangaroo bonds (Australia), Rembrandt bonds (Netherlands), Matador bonds (Spain), Kauri bonds (New Zealand), Dragon bonds (China), Alpine bonds (Switzerland), Maple bonds (Canada), etc. Altogether there are seventeen different categories of foreign debt listed in SDC database based upon destination markets. To remove the tax impacts on the destination market choice, our sample does not include those foreign bonds issued in tax-haven countries such as Belize, Barbados, Cayman, Cyprus, Netherlands Antilles, Panama, Virgin Island, Bermuda, Bahamas, Costa Rica, etc.

We follow the sampling procedures of others (e.g., Gozzi, Levine, and Schmukler, 2010) in order to isolate the foreign debt offerings of corporations rather than those of banks[1]. Moreover, our sample is restricted to only non-convertible foreign bonds. In addition we have eliminated from consideration preferred stock, bonds-pipeline and registrations, medium-term note programs, private debt, as well as mortgage-backed securities and other asset-backed securities. After eliminating firms with missing data and outliers, we were left with a sample of 361 unique firms from 45 economies covering the period 1991–2014, totaling 772 observations.

We manually collected and calculated the distance measures from a variety of different sources. For each data observation we calculated the six distance measures (cultural, knowledge, economic, financial, political, and demographic) between home and host countries as described

[1] We eliminated debt issues by firms in the finance and utility industries, and from governments. Financial firms usually have high leverage, which indicates distress for non-financial firms. Energy firms are highly regulated by local governments, which could have impact on their financing decisions. Our final sample covers different industries such as agriculture, construction, electric service, healthcare, insurance, leisure, manufacturing, real estate, restaurant/hotel, retail, sanitation, telecom, transportation, wholesale, etc.

in Table 1. In addition, we used dummy variables to differentiate between legal systems. Finally, we matched our sample distance variables and bond data to analyze how each individual distance factor influences the cost of debt financing.

3.2 Dependent variable

Yield Spread. From a bond issuer's perspective, cost of debt is the rate at which firm can borrow currently, so it reflects not only the level of interest rates in the market but more importantly the risk premium. We use this as our first proxy for the LOF as the higher the firm's LOF the higher would be its cost of debt. Theoretically, the cost of debt is computed by taking the rate on a risk-free bond matching the term structure of the corporate debt, then adding the risk premium. Corporate bonds typically trade at higher yields than treasury bonds of comparable maturities, since corporate bonds have higher risk, higher probability of default and lower liquidity as compared to the treasury bonds.

Usually we can directly observe interest rates in the financial market. If the firm already has bonds outstanding, the yield to maturity (YTM) on bonds is the market required rate of return on the firm's debt. The yield spread (YS), which is the difference between YTM and Treasury bond, is far more important since it can be used in determining the "relative" cost of debt. It measures the "relative" price of corporate bonds as compared with Treasury bond of the same maturity and it captures the risk premium of interest.

Although it is a common practice in finance to define YS as the relative cost of debt, there is continued debate surrounding whether the YS is related to default risk, liquidity risk, maturity risk, call risk, country risk, or any other potential explanatory variables. Duffee (1998) argues that the relation between non-callable Treasury yields and yield spreads of callable corporate bonds should depend on the callability of the corporate bonds. Collin-Dufresne et al. (2001) find

that monthly credit spread changes are principally driven by local supply/ demand shocks which are independent of credit-risk and liquidity factors. On the other hand, Chen et al. (2007) find that illiquid bonds have higher yield spreads, and improvement in liquidity causes a significant reduction in yield spreads. Huang and Huang (2012) find that credit risk explains a small fraction of investment-grade bonds' yield spreads, while for a much higher fraction of speculative bonds' yield spreads. Our baseline model follows Chen et al. (2007) yield spread determinants such as liquidity, maturity, face value, coupon rate, treasury rate, bond rating, etc.

Interestingly, there is limited research investigating the yield spread of foreign bonds. For example, Melnik and Nissim (2003) investigate the issue costs such as underwriter fee, underwriter spread and underpricing of international bonds. Petrasek (2010) found that global bonds have a significant liquidity and price advantage over comparable domestic bonds. Yet, research has yet to identify the factors that impact the costs of the foreign bonds.

Our focus in this study is to evaluate how distance between the bond's issuer's home and host countries could play a role in the cost of debt. Therefore, to examine the impact of distance on cost of debt for foreign bonds, we gather data from SDC and the Federal Reserve for historical yields on treasury securities. We use this information to compute the yield spread of the newly issued debt relative to treasury securities of the same maturity. We relied upon linear interpolation to estimate the comparable treasury yield in the few instances in which some bond issues could not be perfectly matched to a treasury security maturity at a given point in time. The yield spread is computed as the yield on the bond issue (obtained from the SDC Platinum Global New Issues database) minus the yield on treasury securities[2]. Table 1 provides definition and data sources for each of our variable calculations.

[2] It's common practice in finance to take yield spread as dependent variable when determining the cost of debt. For example, Chen et al. (2007) specified the model with the yield spread as dependent variable and the various yield

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Insert Table 1 about here

Underwriting costs. Although the interest cost is the most important cost that firm incurs while accessing foreign capital markets, there are other one-time costs which are of significant magnitude. Total compensation is typically divided into 20% management fee, 20% underwriting fee, and 60% selling concession (Torstila, 2001). Management fee is the portion of compensation paid to the lead manager; underwriting fee is the portion of compensation paid to the lead and co-managers who were part of the purchasing group, and selling concession is the portion allocated to the selling group, which is equal to the discount at which securities are allocated to the selling group for resale to the investing public minus the offer price. All these three components are expressed in dollars per bond. We aggregated these fees together to have a measure of the one-time cost that the firm incurs when issuing foreign debt.

3.3 Independent variables

The main independent variables of interest in our paper are related to distance which we theorize as an antecedent of liability of foreignness. We measure distance by seven different institutional distance conceptualizations, namely, cultural, knowledge, economic, financial, legal, political and demographic distances. Table 1 summarizes our distance calculations.

Cultural Distance. National culture is defined as the "collective mental program" that normalizes individual activities in a society, with measurements in five dimensions: power distance, uncertainty avoidance, individualism, masculinity, and long-term orientation (Hofstede, 2001). Due to the data limitation for long-term orientation, we use the first four dimensions to

spread determinants as independent variables. We deleted any observations with a negative yield spread, as these are likely data entry errors.

capture cultural distance between the home country and host country, following Kogut and Singh (1988) and Salomon and Wu (2012). There is no agreement in the literature as to what is the best way to measure the distance between two entities (Berry et al., 2010). To analyze the various distance measures individually, we follow the most recent empirical research of Salomon and Wu (2012) by using standardized mean difference. The standardized mean difference reflects how a foreign bond issuer's home country differ from the foreign market on a specific measure. The cultural distance (CD) measure, which is time invariant and constant for each country, is calculated as sum of absolute differences between economic dimensions C_{ni} in home country and C_{ny} in host country divided by the standard deviation SD (C_n) on cultural dimension n across all participating countries, with n represents each dimension of cultural indicator, and i and y stand for the home and host countries respectively. The formula is defined as follows.

$$CD_{i\text{-}y} = \{\sum_{n=1}^{4} ABS(C_{ni} - C_{ny})/SD(C_n)\}$$

We use absolute value (ABS) of the differences to represent the magnitude of distance, with a greater value indicating greater difference between home country's culture and that of the host country.

Knowledge Distance. We follow Berry et al. (2010) to measure knowledge distance (KD) as the absolute value of the difference in knowledge (as measured by the number of scientific articles per 1 million population) between the home and host countries of the foreign bond. Firms are likely to choose to finance firms from a country with similar average capacity of expertise, awareness, judgement, etc. A greater value indicates greater differences between the home country's knowledge level and that of the host country. Unlike in the case of cultural difference, this measure is a time dependent variable and thus changes every year, representing a foreign bond's distance in any given year, given any specific issuer's home and host countries.

The knowledge distance is computed using the following formula, where K_{it} represents the knowledge of home country i at time t and K_{yt} represents the knowledge of host country y at time t.

$$KD_{i\text{-}y,t} = |K_{it} - K_{yt}|$$

Economic Distance. The international business literature has well documented four dimensions of economic distances: country's economic wellbeing as measured by GDP per capita, openness of the economy as measured by imports and exports as a proportion of GDP respectively, and inflation rates. The economic distance (ED) is computed as the sum of absolute differences between economic dimensions E_{nit} in home country and E_{nyt} in host country is divided by the standard deviation SD (E_{nt}) on economic dimensions n across all participating countries, with n represents each dimension of economic indicator, and i and y stand for the home and host countries respectively at time t. The formula is defined as follows:

$$ED_{i\text{-}y,t} = \{\sum_{n=1}^{4} ABS(E_{nit} - E_{nyt})/SD(E_{nt})\}$$

We use absolute value (ABS) of the differences to represent the magnitude of distance, and a greater value indicates greater difference between home country's economic measures and that of the host country.

Financial Distance. The 45 countries in our sample are of various levels of macroeconomic activities, and they also hold heterogeneous financial market structure. Some countries are well developed and organized in the international capital markets while others are still in their emerging stages. Financial differences across countries have exposures related to the equity and credit markets. Following Berry et al. (2010) we included three dimensions in our analysis: market capitalization of listed companies, the number of listed companies, and the amount of private credit available. All these measures are calculated as a percentage of GDP. A higher the

number of listed firms in the host country indicates a more active and more mature financial market, and therefore the country is more attractive to the international capital investors. The financial distance (FD), time-varying throughout the sample period, is calculated as the sum of absolute differences between financial dimensions F_{nit} in home country and F_{nyt} in host country divided by the standard deviation SD (F_{nt}) on financial dimensions n across all participating countries, with n represents each dimension of financial indicator, and i and y stand for the home and host countries at time t respectively. The formula is defined as follows:

$$FD_{i\text{-}y,t} = \{\sum_{n=1}^{4} ABS(F_{nit} - F_{nyt})/SD(F_{nt})\}$$

We use absolute value (ABS) to represent the magnitude of distance, and a greater value indicates greater difference between home country's financial measures and that of the host country.

Legal distance is defined as differences in bureaucratic patterns due to colonial ties, language, religion, and the legal system (Berry et al, 2010; La Porta et al., 1998). Here we use dummy variables to represent the different legal origin, including (1) common law; (2) French civil law; (3) German civil law; and (4) Scandinavian civil law, between the home and host countries of foreign bond. Dummy Variable *Common Law* stands for foreign issued from a firm in a common-law country to a destination market in a civil-law country. Similarly, dummy variables *Scandinavian or German or French* stands for foreign bond issued by a firm from a civil-law country to a destination market of common law system. Benchmark of the dummy variables in the sample means the issuing market and destination market have the same legal system. We view a firm from a civil law country issuing debt in a common law country as a move "up" as common law countries have better investor protection and higher quality of law enforcement. Similarly, a firm from a common law country issuing debt in a civil law country

can be viewed as a move "down." A move to a country with a similar legal system would be a "lateral" move. When the issuing firm is from a common-law country with destination market in the civil law countries, the cost of debt increases with distance.

Political distance is defined as differences in the following five factors including (1) political stability measured by considering independent institutional actors with veto power; (2) country's democracy score; (3) size of the state Government consumption as percentage of GDP; (4) country's membership in WTO; and (5) Regional trade agreement. (Berry et al, 2010). When firms enter politically distant countries, it becomes more difficult for them to conduct business (Gaur and Lu, 2007). Hence, we would expect the cost of borrowing increases when firms issue bonds in politically distance countries. The political distance (PD) is calculated as the sum of absolute differences between political dimensions P_{nit} in home country and P_{nyt} in host country divided by the standard deviation SD (P_{nt}) of political dimensions n across all participating countries, with n represents each dimension of political indicator, and i and y stand for the home and host countries at time t respectively. The formula is defined as follows:

$$PD_{i\text{-}y,t} = \{\sum_{n=1}^{5} ABS(P_{nit} - P_{nyt})/SD(P_{nt})\}$$

We use absolute value (ABS) to represent the magnitude of political distance, A greater value indicates greater differences between the home country's political environment and that of the host country.

Demographic distance is defined as differences in the following four factors including (1) Life expectancy; (2) birth rate (3) population under 14 as percentage of total population and (4) population ages 65 and above as percentage of total population (Berry et al, 2010). A greater value indicates greater differences between the home country's demographic composition and that of the host country. The demographic distance (DD) is calculated as the sum of absolute

differences between demographic dimensions D_{nit} in home country and D_{nyt} in host country divided by the standard deviation SD (D_{nt}) of demographic dimensions n across all participating countries, with n represents each dimension of demographic indicator, and i and y stand for the home and host countries at time t respectively. The formula is defined as follows:

$$DD_{i\text{-}y,t} = \{\sum_{n=1}^{4} ABS(D_{nit} - D_{nyt})/SD(D_{nt})\}$$

We use absolute value (ABS) to represent the magnitude of demographic distance. A greater value indicates greater differences between the home country's political environment and that of the host country.

Frequency of Issuance. The final explanatory variable in our model is frequency of issuance. We operationalized this as a dummy variable. The frequency dummy variable is assigned a value of one if it is by a "frequent" issuer (i.e. firm which issues foreign bond for more than once during the sample period) in the same foreign bond market, and a value of zero otherwise.

3.4 Control variables

Our model includes well accepted bond issue characteristics as control variables in keeping with prior literature. Leland and Toft (1996) find longer *Maturity* leads to higher yield spread, holding all the other factors constant. Specifically, they find that credit spreads at the optimal leverage are almost zero for issuance maturities of 2 years or less, while credit spread significantly increase to 110 basis points for debt with 20 years to maturity. Amihud and Mendelson (1991) find that yield to maturity is higher on debt notes, with longer maturity and liquidity, than treasury bills. They also find that the yield differential between notes and bills is a decreasing and convex function of the time to maturity. Therefore, we use the natural log of issue's maturity in months to capture the convex relationship between maturity and yield spread.

Bond Rating variable proxies for default risk. Actually, bond rating alone explains 15.20% of the cross-sectional variation of yield spread (Chen et al. 2007). While ratings are often useful tools to account for the cost of debt, a firm can have multiple ratings. Here we use the specific foreign bond issue's rating, instead of the firm's long term debt rating, to precisely measure the foreign bond risk level. As detailed in Appendix 1, letter ratings by S&P are mapped into a single numeric scale, with better credit quality indicated by lower numbers: AAA = 1, AA+ = 2, …… , C = 21. S&P's numeric rating, the higher the number, the lower the rating. If S&P's numeric value is higher (i.e., lower S&P's rating), then higher credit risk and higher yield spread. See Appendix 1 for a description of the chart which converts these alphabetical ratings into numerical ratings[3].

Coupon Rate measures the historical rate of return on the bonds, so usually a higher coupon rate leads to a higher required rate of return on bond, and thus a higher yield. Buse (1970) illustrates sign and magnitude of coupon effects on the required rate of return on bonds. Caks (1977) expands the model to derive the zero coupon bond's interest rate from the non-zero coupon bond prices. *Treasury Yield* also has an important impact on the yield spread. If Treasury yield is lower, then market rate is lower and therefore higher callable risk and higher yield spread. Finally, we also control for *Issue Size*. Intuitively, bigger bond issue size should indicate higher default risk and thus higher yield spread. Each of these measures is described in Table 1.

4. Results

[3] We followed common procedure by previous paper such as Morgan (2002) and Livingston et al. (2007) by mapping the letter credit ratings into a single numeric scale, with better letter ratings corresponding to lower numbers: AAA = Aaa = 1, AA+ = Aal =2,... Bl = B3 = 16.

As Table 2 shows, firms from across a wide number of countries and regions have chosen to raise debt externally. However there are a few areas that show considerable activity, both overall and across each of the five year increments. Most notably, firms in Canada, United Kingdom, United States, Asia, and Western Europe have historically had the highest number of foreign debt issues. Among these Canada, United Kingdom and United States had the greatest number of foreign debt offers, followed by firms from Asia and Western Europe. Due to the increasing popularity of global bonds and Eurobonds, across these markets as well as most others, the number of foreign debt offerings has slowed within the 2006-2010 timeframe. Indeed, only firms from Western Europe, the United States, and Asia have maintained a steady volume of foreign debt offerings within this most recent time period.

Insert Table 2 about here

Table 2 also illustrates the markets in which firms choose to raise foreign debt. The US (Yankee bonds) is where most firms have historically chosen to make their foreign corporate debt offers. However, beginning in the 2001-2005 time periods, other markets begin to show increasing volume. In fact, between 2006 and 2010 firms domiciled in Western Europe have chosen other foreign markets, by issuing global bonds and Eurobonds, to raise debt resources and have bypassed US capital markets almost completely. Likewise, firms from almost all other regions have chosen to look to other external capital markets besides the US to raise debt resources.

Second, our sample of foreign bond markets also identified interesting characteristics associated with bond maturity, coupon rate, bond ratings, yield spread, as well as other indicative

characteristics of bonds. As can be seen in Table 3 Panel A, firms from United States issue foreign bonds with the shortest maturity. However, firms from Canada tend to issue Yankee bonds and usually have long maturities. Firms from the United Kingdom, the United States, and France tend to issue the largest foreign bond issues in terms of dollar amount issued.

Insert Table 3 Panels A and B about here

Table 3 Panels A and B contain descriptive statistics of the yield spreads and other variables relevant to our analysis by home and host countries. For investment grade debt issues, the average yield spread is slightly lower. Companies from Canada, Eastern Europe and Central Asia, Latin America and Caribbean, Mexico, Middle East, Western Europe, and others usually issue foreign bonds with lower credit ratings and higher yield spreads. In Table 3 Panel B, there does not appear to be substantive differences in bond maturity across these different listing markets. For instance, US, Australia, and Japan tend to receive the largest foreign bond issues in terms of dollar amount issued, while Spain receives the least. A comparison of the destination markets shows that foreign firms tend to gravitate to the U.S. capital market and issue more Yankee bonds with both larger principal amounts and longer terms than other foreign bond destination markets. Most importantly, among destination markets for foreign bonds, Yankee bonds charge the highest yield spread.

Table 4 provides summary statistics of distance measures. Table 5 shows the correlations between pairs of dimensions of distance, each calculated with the greatest number of observations available. The coefficients signs are as expected. Our results show that distance measures (cultural, knowledge, economic, financial, and demographic) are mostly positively

correlated with each other. Although correlations are generally as expected, some coefficients among the distance variables are high, therefore, we will test the individual distance measures in regression to eliminate potential multicollinearity concerns.

Insert Tables 4 and 5 about here

4.1 Empirical results

Table 6 presents the multivariate regression results using yield spread as a proxy for LOF. We run the following regression equation to test the impact of institutional distance measures, both separately and collectively, on the yield spread. We control the year dummy in each regression given that the sample covers 24 years. In addition, we control issuer fixed effects in each regression to prevent potential issuer influences since a small set of companies may dominate the foreign bond market.

$$YIELD\_SPREAD_{iy,t} = f\{Maturity_{iy,t}, Issue\_Size_{iy,t}, Coupon\_Rate_{iy,t}, Credit\_Rating_{iy,t},$$
$$Freq\_Issue_{iy,t}, Treasury\_Yield_{iy,t}, DISTANCE_{n,iy,t}\}$$

Table 6 Column (1) consists of the base model without the distance independent variables. As expected, cost of debt of foreign bonds increases with larger maturity risk, larger issue size, higher historical rate, higher callable risk, and lower credit rating. Our results demonstrate that cost of debt is sensitive to the frequency of foreign bond issuance. Specifically, these results suggest that the cost of foreign bonds diminish for frequent foreign bond issues.

Insert Table 6 about here

Columns (2) – (8) in Table 6 include the distance variables to evaluate LOF in foreign debt markets. Coefficient of cultural distance in Column (2) of Table 6 demonstrates a positive relationship between the cultural distance between a home and host country and the extent of LOF faced by a foreign firm. For example, the result shows one percentage increase (decrease) in cultural distance and knowledge distance would lead to 0.061 percentage and 0.581 percentage of increase (decrease) in the yield spread, respectively. Economic distance and legal distance have larger and more significant impact on the yield spread, with one percentage increase (decrease) in economic distance and legal distance in common law resulting in 0.917 percentage and 0.891 percentage of increase (decrease) in the yield spread, respectively. In addition, adding the distance measures into the baseline model also improves the R^2 of regressions in general.

In column (3), we find that Knowledge Distance is significantly positively related to the cost of foreign debt. The results suggests that the yield spread increases with the Knowledge Distance. Therefore, cultural-cognitive and knowledge distances do affect the cost of financing in foreign capital markets.

The coefficient of *Economic Distance* is significantly positive in column (4) of Table 6, suggesting a larger economic distance between home and host countries contribute to the increase of the cost of debt. This result seems intuitive in that the cost of "home bias" is reflected here in the cost of debt. Controlling for issue characteristics, firms attempting to finance in the foreign bond market will be charged a higher rate if they choose the destination market with a more different economy.

Column (5) in Table 6 replace the *Economic Distance* with the *Financial Distance* measure. The results also suggest that magnitude of coefficient is much smaller than the economic

distance (0.917 vs 0.117). Besides, LOF is more sensitive to the *Economic* difference between the two countries. These results demonstrate that *Economic Distance* impacts foreign bond investor returns more than *Financial Distance*, ceteris paribus.

In columns (6), (7) and (8), we examine the effects of *legal, political*, and *demographic distance*, respectively. Column (6) results are consistent with prior research of La Porta et al. (1997). Coefficient of Common Law is significantly positive, suggesting that the firm from a common law country moving "down" to a civil-law foreign market (weaker investor protections and lower quality of law enforcement), tend to have a higher cost of debt compared to those who move laterally to a similar common law foreign market. This is because countries with poorer investor protections have smaller and narrow capital markets thus representing higher risk and corresponding higher cost of financing. On the contrary, coefficients of Civil Laws are significantly negative, suggesting that the firm from a civil law country moving "up" to a foreign market of common law system (stronger investor protections and higher quality of law enforcement), is more likely to receive a reduction in the cost of debt compared with those who move "laterally" to a similar civil law foreign market. In particular, we find firms from French law system receive the highest discount when they choose to issue foreign debt in a common law country rather than a French civil law country.

Columns (9) and (10) provide results using all distance measures in the regression instead of including them individually. Column (9) report coefficient estimates which include all distance measures with the whole sample. To remove any potential bias that could arise from a large number of foreign bond issues by US firms, we re-ran the regressions with only non-US issued foreign bonds. Column (10) reports coefficient estimates which include all distance measures

with only the non-US issued foreign bonds. Results on columns (9) and (10) again show increase in institutional distance leads to increased cost of debt.

Given that yield spread is only one possible manifestation of LOF, we extended our analysis by examining the impact of LOF on issuing cost. Compared with a bond's borrowing cost which is measured as yield spread (an indicator of the credit risk of that bond relative to the risk free benchmark), issuing cost is priced by underwriters either based on some issue characteristics directly by adjusting the fee or other characteristics indirectly by setting the guaranteed price (Melnik and Nissim, 2003). More importantly, we explore if a "frequent" foreign bond issuer could have some comparative advantage in the issuance process, i.e., frequency of foreign bond issuance could possibly help to mitigate the underwriting costs.

In Table 7 we present the regression results of underwriting cost (sum of management fee, underwriting fee and selling concession) against the distance variables, frequency dummy variable and issue characteristics control variables. Since only publicly listed firms provide issuing cost data, our sample size is reduced almost by half here. The coefficients we are most interested are the coefficients for distance variables and the coefficient for frequency dummy variable. The results of Table 7 are similar to the results in Table 6 in that underwriting costs of foreign bond issuance increases with larger maturity risk, larger issue size, higher historical rate, higher callable risk, and lower credit rating. Further, underwriting cost is very sensitive to the frequency of foreign bond issuance, and the frequency dummy variable is significant in all four columns of Table 7. Knowledge distance and financial distance have significant impact on the underwriting costs. Columns (1) shows one percentage increase (decrease) in knowledge distance would lead to 2.849 percentage of increase (decrease) in the yield spread; likewise, one percentage increase (decrease) in financial distance would lead to 5.712 percentage of increase

(decrease) in the yield spread, respectively. Interestingly, coefficients on some distance measures (cultural, economic, legal, political, and demographic) are no longer significant, indicating that frequency helps to mitigate the issuing cost since frequent issuers tend to have lower monitoring, certification, and marketing costs per dollar of new capital than do new issuers in the foreign capital market.

Insert Table 7 about here

Overall, results in Tables 7 show that the coefficients associated with frequent foreign bond issuers are significantly negative in all columns of the table.[4] Our results validate Yasuda (2005) that there is a significant underwriting fee discount when there are certain "relationships" between firms and banks, i.e., "the more familiar is cheaper". One possible explanation is that for frequent issuers the underwriter's marginal information costs are lower and they are passing on the part of these cost savings to the issuing firms.

Table 7 also confirms Melnik and Nissim (2003) that total underwriter compensation increases with the bonds' credit risk and maturity, but it is insignificantly related to issue size. Moreover, by controlling for issue size, we rule out the possibility that economies of scale is the source of cost reduction (Altinkilic and Hansen, 2000). Instead we find that it is attributable to the issuer's previous foreign issuance history. Therefore the results in Tables 7 clearly suggest that the LOF could be significantly lessened because of the company's previous experience in foreign bond issuance. Table 7 columns (3) and (4) report results of non-US issued foreign bonds only. Results on four columns are highly consistent.

[4] The results are consistent regardless whether the issuing cost is measured by management fee, underwriting fee, or selling concessions.

4.2 Robustness tests

We conducted three different robustness tests to assess the validity of our results. We had originally estimated our models using Euclidean distance measures. Euclidean distance, defined as the geometrically shortest possible distance between two points, is a popular measure of distance in social science studies (Berry et al., 2010). The Euclidean distance measure meets all five of the desirable properties including symmetry, non-negativity, identification, definiteness, and triangle inequality. In the robustness test, we followed Berry et al. (2010) and used Mahalanobis distance measures instead of Euclidean distance. This helps to overcome the methodological limitations of the Euclidean approach, which is scale invariant and takes into consideration the variance–covariance matrix. The Mahalanobis method ensures that variables are orthogonal to each other. We followed Berry et al.'s (2010) approach to operationalize these variables and they were computed the same way other distance measures were computed (see Table 1 for further details). Our results in Tables 8 and Table 9 show that *Cultural Distance, Knowledge Distance, Financial Distance, Legal Distance, Demographic Distance*, and Geographic Distance) are each significantly positively related with the cost of foreign debt financing.[5] Furthermore, for both tables we run the non-US issues subsample regression in the last column of the table and the results are highly consistent with those on the whole samples.

Insert Tables 8 and 9 about here

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[5] Heather Berry provides data for the nine institutional distance dimensions of the 2010 JIBS paper on the Wharton LAUDER website: http://lauder.wharton.upenn.edu/resources-publications/. However, as stated in general instructions, "… distance dimensions are only as good as the underlying raw data that were used to create them. Where there is missing data across countries and time in the source data, we also suffer from the same missing data points. In addition, there is one distance dimension where we interpolated between two data points to create yearly data – our cultural distance dimension."

Second, we repeated the analysis with Eurobonds as our sample to examine if the LOF exists for firms issuing Eurobonds. In order to make the Eurobonds result comparable to the foreign bonds, we also cleaned the Eurobond data with the same procedures such as removing issuances from tax haven countries, only including non-financial issuance or non-government issuance, non-callable bond, etc. The results show that, unlike foreign bonds, Eurobonds do not experience any significant LOF. This could be explained by the following two reasons. First, Eurobond distance between home and destination market is difficult to define and measure since the listing location is only for legal purposes and is not the real destination market. Second, Eurobonds are not subject to any national regulation while foreign bonds are issued in destination country's currency and are subject to destination market's rules and regulations. Therefore, foreign bonds incur more costs than Eurobonds, and that could partially explains why LOF effects are significant only for foreign bonds. The result also explains why the foreign bonds are waning and Eurobonds are gaining increasing popularity in recent years. Eurobonds takes more than 70% of cross-border bond issuance in the last decade.

Finally, to address potential problems with sample bias, we clustered standard errors by time and country as suggested by Petersen (2009). The results for the clustering analyses confirm our conjectures as we expected. Taken together, the results of all three robustness tests provide greater confidence in our results.

Insert Table 10 about here

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5. Discussion and conclusion

Today firms have access to debt markets outside of their country of origin and bond issues in foreign markets are becoming increasingly common. LOF is inherently a relative construct in

that its degree can only be assessed relative to host country competitors. However, identifying and measuring LOF presents challenges that are specific to capital markets. There is a growing body of evidence regarding the prevalence of LOF in all types of capital markets, namely equity, debt, and venture capital. Yet, understanding what forms these liabilities can take and identifying their sources are vital to develop strategies for overcoming them. Unlike product markets, there is no equivalent of profitability in capital markets, whether debt or equity markets. However, these liabilities may manifest in the form of higher costs of raising capital, lower liquidity of its securities, and tighter regulation of foreign firm's securities compared to their local counterparts.

We believe that the foreign bond market context offers a rich setting for international business and finance scholars to understand capital raising activities of firms, factors that impact market choice decisions, and how firms can overcome home country disadvantages. From a theoretical perspective, we believe that our study of foreign debt markets can help prompt further investigations into the disadvantages firms face in host capital markets, and how firms successfully mitigate these disadvantages. The decision to access foreign capital markets is likely to involve much more than simple comparisons of cost of debt in different markets. Given the wide variation in disclosure standards and monitoring intensity across capital markets, a consideration of institutional differences is critical in understanding both firm decisions with regard to where to access debt markets and subsequent implications for a firm's strategic choices.

Most prior studies on institutional distance focus on a single dimension (or subset of dimensions). This results in what at best is a partial understanding of the impact of institutional distance on the dependent variable of interest. Further, although institutional distance is a

prominent construct in the international business literature, prior research has yet to explicitly examine the role of distance in the international capital market. In this study, we attempt a more comprehensive evaluation of the impact of distance by employing seven separate conceptualizations of distance including cultural, knowledge, economic, financial, legal, political, and demographic) to measure the cross-national differences.

Our study shows that although firms are increasingly looking to source debt in foreign capital markets, greater institutional distance from the market does indeed lead to higher cost of debt. Thus, we provide increasing confirmation that the LOF phenomenon is equally prevalent in capital markets as well (Bell, Filatotchev and Rasheed, 2012). The results hold across multiple operationalizations of LOF. Further, the results are consistent across different conceptualizations of institutional distance. Second, our results also indicate that there are ways to mitigate LOF costs. The familiarity that accrues from repeated debt offerings in the same market can indeed reduce LOF over time. Building reputation and trust through the process of repeated issuances of debt or equity is one of the strategies that a firm can pursue to reduce its cost of capital when accessing capital resources outside its home market.

Our study of the foreign bond market not only provides insights into the costs firms face when sourcing debt resources abroad, it also opens the door to future research into the strategies firms can employ to mitigate those costs and disadvantages. Indeed, much of what is known about capital raising activities of firms has been confined to equity markets. Foreign bonds can provide a rich context in which scholars can further understand capital raising activities of firms, factors that impact market choice decisions, and how firms can overcome home country disadvantages.

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Table 1 Variables Definition for Foreign Bond Issuance Measures and Distance Measures

Debt Issuance Measures	Definition	Data Source
Yield to Maturity	The annualized rate of return anticipated on a bond if held until end of its maturity, measured in Percentage.	Thomson Reuters Securities Data Company (hereafter SDC) Platinum
Treasury Yield	The interest rate, measured in percentage, which the government pays to borrow money by issuing the government's debt for different lengths of time.	Federal Reserve Bank, SDC
Yield Spread	Difference between yield spread and treasury yield of the same maturity	SDC
Log (Maturity)	Natural log of issue's maturity in months	SDC
CPN	Coupon rate in Percentage	SDC
Issue Size	Bond issue's principal value (in thousands $)	SDC
S&P Rating	S&P's numeric rating, the higher the number, the lower the rating	SDC
Frequency of Issuance	If the bond issuer frequently issue foreign bond in the foreign bond market nation.	SDC
Distance Measures	**Definition**	**Data Source**
Cultural Distance	Differences in attitudes toward authority, trust, individuality, and importance of work and family, including (1) power distance, as measured by World Value Survey questions on obedience and respect for authority; (2) Uncertainty avoidance, as measured by World Value Survey questions on trusting people and job security; (3) Individualism, as measured by World Value Survey questions on independence and the role of government in providing for its citizens; and (4) Masculinity, as measured by World Value Survey questions on the importance of family and work.	WorldValueSurvey (WVS) Database
Knowledge Distance	Differences in patents and scientific production, including (1) number of patents, per 1 million population; and (2) number of scientific articles, per 1 million population.	U.S. Patent Database - United States Patent and Trademark Office (USPTO), Publications Database (WTI)
Economic Distance	Differences in economic development and macroeconomic characteristics, including: (1) GDP per capita; (2) inflation rate, GDP deflator in %; (3) imports of goods and services as % of GDP; and (4) exports of goods and services as % of GDP.	World Development Indicators (hereafter WDI)
Financial Distance	Differences in financial sector development, including: (1) domestic credit to private sector as % of GDP; (2) Market capitalization of listed companies as % of GDP; and (3) Number of listed companies, per 1 million population.	WDI
Political Distance	Differences in political stability, democracy, and trade bloc membership, size of the state, as measured by government consumption as % of GDP	WDI
Demographic Distance	Differences in demographic characteristics, including: (1) Life expectancy, as measured by life expectancy at birth, total (years); (2) birth rate, per 1000 people; (3) Population of ages 0–14 as % of total population; and (4) Population ages 65 and above as % of total population.	WDI
Connectedness Distance	Differences in tourism and Internet use, including: (1) international tourism expenditure, as % of Imports; (2) international tourism receipts, as % of Exports; and (3) internet use Internet users per 100 people.	WDI

Table 2
Foreign Bonds by Issuer's Home Country (1991-2014)

This table presents all new public foreign bond issues by home countries and by Yankee vs non-Yankee bonds. Data is obtained from Thomson Financial SDC Platinum Global New Issues database over the period January 1, 1991 through December 31, 2014. We follow the sampling procedures of others (e.g.,Gozzi, Levine, & Schmukler, 2010) in order to isolate the foreign debt offerings of corporations rather than those of banks. Moreover, our sample is restricted to only non-convertible foreign bonds. In addition we have eliminated from consideration preferred stock, bonds-pipeline and registrations, medium-term note programs, private debt, as well as mortgage-backed securities and other asset-backed securities. Further, to remove the tax impacts on the destination market choice, our sample does not include those foreign bonds issued in tax-haven countries such as Belize, Barbados, Cayman, Cyprus, Netherlands Antilles, Panama, Virgin Island, Bermuda, Bahamas, Costa Rica, etc. After applying these screening criteria, the final sample contains 772 new bond issues from 361 unique non-bank firms between January 1, 1991 and December 31, 2014. Letter ratings by the two agencies are transformed into a numeric scale and higher letter ratings correspond to lower numbers. The definitions of each variable and numeric ratings are described in Table 1 and Appendices A respectively.

Home Country	1991-1995			1996-2000			2001-2005			2006-2010			2011-2014		
	Yankee	Other	Total	Yankee	Other	Total	Yankee	Other	Total	Yankee	Other	Total	Yankee	Other	Total
Africa	0	0	0	6	1	7	0	0	0	0	0	0	0	0	0
Asia	16	8	24	26	10	36	1	3	4	0	1	1	0	5	5
Australia	1	4	5	9	7	16	4	0	4	0	4	4	0	5	1
Canada	90	0	90	122	1	123	48	0	48	5	0	5	8	5	13
Eastern Europe & Central Asia	0	0	0	4	0	4	1	0	1	0	1	1	0	0	0
France	3	3	6	1	12	13	0	1	1	3	10	13	1	5	3
Germany	0	0	0	5	5	10	0	3	3	0	2	2	0	5	1
Japan	0	1	1	3	0	3	0	0	0	0	0	0	0	0	0
Latin America & Caribbean	3	0	3	34	0	34	2	0	2	0	0	0	0	0	0
Mexico	3	0	3	15	0	15	3	0	3	0	0	0	0	5	2
Middle East	0	0	0	7	0	7	0	0	0	0	0	0	0	0	0
Netherlands	12	1	13	14	1	15	1	1	2	0	0	0	0	0	0
New Zealand	4	0	4	1	0	1	0	0	0	0	0	0	0	5	3
Other	6	0	6	10	0	10	2	0	2	2	0	2	0	0	0
United Kingdom	8	0	8	62	0	62	3	0	3	0	2	2	4	5	9
United States	0	6	6	0	20	20	0	7	7	0	17	17	0	5	14
Western Europe	7	0	7	39	2	41	2	0	2	0	0	0	1	5	1
Total	154	23	176	358	59	417	67	15	82	12	38	50	14	5	47

Table 3 (Panel A and Panel B)
Summary Statistics of Bond Issue Characteristics

Table 3 reports summary statistics for the newly issued foreign bond-specific characteristics, market variables, and other control variables by issuer's home country in Panel A and by foreign bond host country in Panel B. Maturity in Month is the foreign bond issue's maturity in months; issue size is the bond issue's principal value in millions $; coupon in % is the coupon rate in percentage; S&P is the numeric credit rating converted from letter rating with the higher the number, the lower the rating; Similarly, Moody is the is the numeric Moody's credit rating converted from letter rating with the higher the number, the lower the rating Yield to Maturity in % is the annualized rate of return anticipated on a bond if held until end of its maturity, measured in percentage. Treasury yield is the interest rate, measured in percentage, which the government pays to borrow money by issuing the government's debt for different lengths of time. Yield spread is the difference between yield spread and treasury yield of the same maturity, measured in Basis Point.

Panel A Home Country	**N**	**Maturity in Month**		**Principal in Million $**		**Coupon in %**		**S&P**		**Moody**		**Yield to Maturity in %**		**Treasury Yield in %**		**Yield Spread in Basis Point**	
		Mean	Std	Mean	Std	Mean	Std	Mean	Std	Mean	Std	Mean	Std	Mean	Std	Mean	Std
Africa	7	34.55	41.96	144.33	80.52	6.78	2.78	5.71	5.31	5.57	5.16	6.89	3.02	6.13	0.43	144.60	274.53
Asia	70	109.89	68.91	228.66	124.63	6.26	3.23	7.97	3.41	8.49	3.07	7.75	11.66	4.53	2.68	182.23	156.19
Australia	30	82.02	40.45	233.60	117.88	6.67	2.51	5.76	4.32	6.07	4.53	7.16	2.61	5.47	1.12	216.33	283.34
Canada	274	153.03	97.19	221.43	203.36	8.31	1.93	10.05	3.65	10.50	3.73	8.53	1.93	5.95	1.27	260.71	190.21
East Europe &CentralAsia	6	80.36	34.46	179.96	96.50	6.34	5.03	11.50	3.56	11.67	4.23	7.87	4.31	3.16	1.83	279.25	223.19
France	36	93.99	93.13	424.08	471.96	4.77	2.73	4.22	3.12	4.19	2.94	4.75	2.67	2.76	2.60	123.62	118.37
Germany	16	55.83	31.88	255.51	208.18	3.28	2.32	5.94	3.60	5.88	3.40	3.98	3.39	2.49	2.32	138.31	174.80
Japan	4	120.40	42.48	58.94	59.58	8.79	2.59	7.25	6.29	5.50	6.40	8.72	2.51	5.58	0.27	243.33	227.50
Latin Amer. & Caribbean	39	123.47	72.96	202.62	119.47	9.01	2.50	10.51	3.37	11.46	3.39	9.36	2.05	5.96	0.57	333.91	214.69
Mexico	23	86.57	27.03	241.41	212.97	9.13	2.95	11.90	2.64	12.24	2.74	9.13	2.97	5.31	1.93	341.47	181.78
Middle East	7	127.02	52.69	267.86	203.98	7.43	3.82	9.86	4.91	9.57	4.39	9.24	2.43	5.79	0.18	395.80	274.84
Netherlands	33	150.56	103.21	270.23	198.96	7.71	2.59	8.24	3.78	8.58	4.04	7.77	2.59	5.55	1.80	232.56	244.88
New Zealand	8	178.97	124.71	214.01	77.59	6.75	2.29	6.63	2.56	7.13	2.03	6.80	2.30	5.76	2.41	104.00	29.25
Spain	3	142.36	89.62	90.00	138.56	5.96	1.19	4.67	0.58	4.33	0.58	5.96	1.19	4.48	0.40	89.50	48.79
United Kingdom	84	127.37	79.59	417.90	449.42	7.26	3.00	9.26	3.79	9.63	3.81	7.90	2.73	5.31	1.54	237.49	210.85
United States	64	53.43	20.85	342.27	234.98	3.54	1.80	4.69	1.53	4.58	1.42	3.55	1.81	1.97	1.51	68.44	51.24
Western Europe	48	149.15	96.06	242.57	259.88	8.08	2.60	10.27	3.96	10.55	3.93	8.43	2.39	5.79	0.75	272.17	204.56
Other	20	118.87	88.93	260.23	282.20	9.26	2.43	10.70	2.18	11.20	2.21	9.34	2.48	6.27	1.99	307.45	219.72
Panel B Host Country	**N**	**Maturity in Month**		**Principal in Million $**		**Coupon in %**		**S&P**		**Moody**		**Yield to Maturity in %**		**Treasury Yield in %**		**Yield Spread in Basis Point**	
		Mean	Std	Mean	Std	Mean	Std	Mean	Std	Mean	Std	Mean	Std	Mean	Std	Mean	Std
Australia	11	71.58	19.73	287.23	147.81	5.17	0.96	4.20	1.99	4.55	1.75	5.24	0.97	4.22	1.21	113.20	36.96
Canada	28	74.41	57.02	331.30	198.26	3.81	0.99	4.85	1.97	5.19	2.21	3.82	0.99	2.62	1.24	106.60	49.51
China	1	240.85	n/a	118.57	n/a	4.65	n/a	12.00	n/a	12.00	n/a	4.65	n/a	3.62	n/a	103.00	n/a
Japan	117	52.53	24.50	283.34	204.50	3.23	1.86	5.37	2.34	5.40	2.30	3.23	1.86	0.85	0.46	83.70	93.66
New Zealand	4	114.60	6.65	170.59	87.86	7.62	0.99	2.00	1.73	1.00	0.00	7.27	1.28	6.92	0.47	25.67	5.13
Spain	7	95.19	91.09	80.00	7.62	8.72	2.12	1.00	0.00	1.00	0.00	8.45	2.00	6.78	n/a	13.00	n/a
United States	604	140.93	90.12	263.83	282.14	8.23	2.37	9.75	3.82	10.16	3.88	8.77	4.38	5.87	1.25	263.81	204.73

Table 4 Summary Statistics of Institutional Distances

Table 4 provides summary statistics of distance measures. Cultural distance is differences in attitudes toward authority, trust, individuality, and importance of work and family, including (1) power distance, as measured by World Value Survey questions on obedience and respect for authority; (2) Uncertainty avoidance, as measured by World Value Survey questions on trusting people and job security; (3) Individualism, as measured by World Value Survey questions on independence and the role of government in providing for its citizens; and (4) Masculinity, as measured by World Value Survey questions on the importance of family and work. Knowledge distance is differences in patents and scientific production, including (1) number of patents, per 1 million population; and (2) number of scientific articles, per 1 million population. Economic Distance is differences in economic development and macroeconomic characteristics, including: (1) GDP per capita; (2) inflation rate, GDP deflator in %; (3) imports of goods and services as % of GDP; and (4) exports of goods and services as % of GDP. Financial Distance is differences in financial sector development, including: (1) domestic credit to private sector as % of GDP; (2) Market capitalization of listed companies as % of GDP; and (3) Number of listed companies, per 1 million population. Political Distance is differences in political stability, democracy, and trade bloc membership, size of the state, as measured by government consumption as % of GDP. Demographic Distance is differences in demographic characteristics, including: (1) Life expectancy, as measured by life expectancy at birth, total (years); (2) birth rate, per 1000 people; (3) Population of ages 0–14 as % of total population; and (4) Population ages 65 and above as % of total population.

Distance	Mean	Minimum	25th Pctl	50th Pctl	75th Pctl	Maximum	Std Dev
Cultural Distance	1.334	0.123	0.123	0.319	1.883	6.208	1.758
Knowledge Distance	1.529	0.040	1.445	1.693	1.821	1.996	0.500
Economic Distance	0.150	0.003	0.085	0.097	0.130	1.012	0.132
Financial Distance	0.585	0.039	0.445	0.500	0.575	9.652	0.746
Political Distance	5.076	0.019	3.546	4.888	6.593	13.860	2.476
Demographic Distance	0.044	0.000	0.014	0.022	0.038	0.970	0.108

Table 5 Correlation of Institutional Distance

Table 5 provides correlations of distance measures. Cultural distance is differences in attitudes toward authority, trust, individuality, and importance of work and family, including (1) power distance, as measured by World Value Survey questions on obedience and respect for authority; (2) Uncertainty avoidance, as measured by World Value Survey questions on trusting people and job security; (3) Individualism, as measured by World Value Survey questions on independence and the role of government in providing for its citizens; and (4) Masculinity, as measured by World Value Survey questions on the importance of family and work. Knowledge distance is differences in patents and scientific production, including (1) number of patents, per 1 million population; and (2) number of scientific articles, per 1 million population. Economic Distance is differences in economic development and macroeconomic characteristics, including: (1) GDP per capita; (2) inflation rate, GDP deflator in %; (3) imports of goods and services as % of GDP; and (4) exports of goods and services as % of GDP. Financial Distance is differences in financial sector development, including: (1) domestic credit to private sector as % of GDP; (2) Market capitalization of listed companies as % of GDP; and (3) Number of listed companies, per 1 million population. Political Distance is differences in political stability, democracy, and trade bloc membership, size of the state, as measured by government consumption as % of GDP. Demographic Distance is differences in demographic characteristics, including: (1) Life expectancy, as measured by life expectancy at birth, total (years); (2) birth rate, per 1000 people; (3) Population of ages 0–14 as % of total population; and (4) Population ages 65 and above as % of total population.

	Cultural Distance	Knowledge Distance	Economic Distance	Financial Distance	Political Distance	Demographic Distance
Cultural Distance	1.000					
Knowledge Distance	-0.024 0.528	1.000				
Economic Distance	0.727 <.0001	0.292 <.0001	1.000			
Financial Distance	0.119 0.002	-0.206 <.0001	0.021 0.585	1.000		
Political Distance	-0.253 <.0001	0.156 <.0001	-0.233 <.0001	-0.150 <.0001	1.000	
Demographic Distance	0.325 <.0001	0.036 0.352	0.262 <.0001	-0.014 0.717	-0.128 0.001	1.000

Table 6 Yield Spread Regression on Distance

Table 6 presents the regression results of yield spread against distance measures of foreign bonds with controls for bond issue-specific variables. Dependent variable is yield spread. Columns (1) reports the baseline model without adding the distance measures. Models (2) – (8) reports coefficient estimates from individual distance measures. Model (9) report coefficient estimates which include all distance measures with the whole sample. To remove the "US effect", column (10) report coefficient estimates which include all distance measures with only the non-US issued foreign bonds. log (Maturity) is the natural log of issue's maturity in months; Issue Size is bond issue's principal value (in thousands $); Coupon Rate is Coupon rate in Percentage; S&P Rating is the S&P's numeric rating, the higher the number, the lower the rating; Yield to Maturity is annualized rate of return anticipated on a bond if held until end of its maturity, measured in Percentage. Treasury Yield is the interest rate, measured in percentage, which the government pays to borrow money by issuing the government's debt for different lengths of time. Yield Spread is difference between yield spread and treasury yield of the same maturity. Frequency of Issuance is dummy variable with assigned value of 1 if the bond issuer frequently issue foreign bond in the foreign bond market nation and 0 otherwise. All distance measures, including Cultural Distance, Knowledge Distance, Economic Distance, Financial Distance, Legal Distance, Political Distance, and Demographic Distance are same as defined in Tables 3 & 4. Standard errors are shown in parentheses. *, **, *** indicates statistical significance at the 10%, 5%, and 1% levels, respectively. The definitions of each variable and numeric ratings are described in Table 1 and Appendix 1 respectively.

	Dependent Variable: Yield Spread in Percentage																			
	(1)		**(2)**		**(3)**		**(4)**		**(5)**		**(6)**		**(7)**		**(8)**		**(9)**		**(10)**	
Intercept	-0.930	*	-0.988	*	-1.755	***	-2.167	***	-1.319	***	-0.916	*	-1.261	***	-1.973	***	-1.515		-1.443	
	(0.547)		(0.597)		(0.586)		(0.491)		(0.484)		(0.540)		(0.485)		(0.473)		(1.128)		(1.147)	
log (Maturity)	0.094		0.071		0.058		0.130	*	0.093		0.069		0.057		0.096		0.114		0.151	*
	(0.077)		(0.080)		(0.081)		(0.078)		(0.080)		(0.078)		(0.081)		(0.078)		(0.084)		(0.085)	
Issue Size	0.028		0.079		0.014		0.034		0.054		-0.06		0.069		0.031		-0.034		0.008	
	(0.167)		(0.174)		(0.185)		(0.167)		(0.176)		(0.171)		(0.182)		(0.172)		(0.185)		(0.190)	
Coupon Rate	0.228	***	0.205	***	0.189	***	0.220	***	0.215	***	0.202	***	0.212	***	0.226	***	0.168	***	0.163	***
	(0.024)		(0.024)		(0.024)		(0.024)		(0.024)		(0.024)		(0.024)		(0.024)		(0.025)		(0.026)	
Treasury Yield	-0.169	***	-0.126	***	-0.193	***	-0.184	***	-0.183	***	-0.128	***	-0.141	***	-0.169	***	-0.194	***	-0.272	***
	(0.043)		(0.046)		(0.049)		(0.044)		(0.046)		(0.045)		(0.048)		(0.043)		(0.056)		(0.066)	
Frequency of Issue	-0.248	**	-0.169	*	-0.207	**	-0.211	**	-0.23	**	-0.207	**	-0.235	**	-0.244	**	-0.161		-0.109	
	(0.099)		(0.102)		(0.103)		(0.101)		(0.103)		(0.099)		(0.104)		(0.100)		(0.107)		(0.109)	
S&P Rating	0.367	***	0.376	***	0.379	***	0.381	***	0.386	***	0.3818	***	0.382	***	0.368	***	0.405	***	0.411	***
	(0.015)		(0.015)		(0.015)		(0.015)		(0.016)		(0.015)		(0.015)		(0.015)		(0.016)		(0.016)	
Cultural Distance			0.061	**													0.073		0.031	
			(0.026)														(0.058)		(0.059)	
Knowledge Distance					0.581	***											0.051		0.015	
					(0.148)												(0.220)		(0.263)	
Economic Distance							0.917	***									1.655	**	2.189	***
							(0.346)										(0.751)		(0.769)	
Financial Distance									0.117								0.062		0.089	
									(0.081)								(0.087)		(0.108)	
Common Law											0.8914	***					0.816	***	1.268	***
											(0.163)						(0.246)		(0.284)	
Scandinavian Civil											-0.949	***					-1.067	**	-1.527	***
											(0.330)						(0.542)		(0.559)	
French Civil											-0.726	**					-0.896	***	-1.284	***
											(0.162)						(0.246)		(0.277)	
German Civil											-0.441	**					-0.744	***	-0.519	**
											(0.183)						(0.255)		(0.281)	
Political Distance													0.027				0.084	***	0.084	***
													(0.022)				(0.030)		(0.031)	
Demographic Distance															0.092		-5.513	**	-6.093	**
															(0.361)		(2.614)		(2.643)	
Fixed Effect	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes	
Year Dummy	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes	
N	582		551		525		548		526		563		520		572		488		468	
Adj. R^2	0.782		0.783		0.787		0.794		0.792		0.792		0.789		0.780		0.808		0.760	

Table 7 Underwriting Costs Regression on Distance

Table 7 presents the regression results of underwriting cost against distance measures with controls for bond issue-specific variables. Total underwriting fee is composed of selling concession fee, management fee, and underwriting fee. Among these, selling concession is a major component of total underwriting fee. Columns (1) and (2) report the selling concession and total underwriting fee regressions on distance variables with the whole sample; columns (3) and (4) report the selling concession and total underwriting fee regressions on distance variables with the non-US issued foreign bond samples only. Log (Maturity) is the natural log of issue's maturity in months; Issue Size is bond issue's principal value (in thousands $); Coupon Rate is Coupon rate in Percentage; S&P Rating is the S&P's numeric rating, the higher the number, the lower the rating; Yield to Maturity is annualized rate of return anticipated on a bond if held until end of its maturity, measured in Percentage. Treasury Yield is the interest rate, measured in percentage, which the government pays to borrow money by issuing the government's debt for different lengths of time. Yield Spread is difference between yield spread and treasury yield of the same maturity. Frequency of Issuance is dummy variable with assigned value of 1 if the bond issuer frequently issue foreign bond in the foreign bond market nation and 0 otherwise. All distance measures, including Cultural Distance, Knowledge Distance, Economic Distance, Financial Distance, Legal Distance, Political Distance, and Demographic Distance are same as defined in Tables 3 & 4. Standard errors are shown in parentheses. *, **, *** indicates statistical significance at the 10%, 5%, and 1% levels, respectively. The definitions of each variable and numeric ratings are described in Table 1 and Appendix 1 respectively.

Dependent Variable: Total Underwriting Fee								
	Whole Sample				**Non-US Issuance**			
	(1)		**(2)**		**(3)**		**(4)**	
Intercept	-6.349		-7.966		-6.487		-15.182	**
	(4.416)		(5.086)		(4.536)		(6.229)	
log (Maturity)	0.998	*	1.403	***	1.008	**	1.487	***
	(0.481)		(0.517)		(0.499)		(0.530)	
Issue Size	0.112		0.135		-0.059		0.167	
	(1.118)		(1.156)		(1.201)		(1.215)	
Coupon Rate	0.520	***	0.417	*	0.512	***	0.374	
	(0.191)		(0.223)		(0.197)		(0.231)	
Treasury Yield	0.532		-0.470		0.666		-0.230	
	(0.333)		(0.477)		(0.361)		(0.509)	
Frequency of Issue	-1.150	**	-1.130	*	-1.213	**	-1.303	**
	(0.590)		(0.650)		(0.614)		(0.672)	
S&P Rating	0.295	***	0.327	***	0.316	***	0.417	***
	(0.107)		(0.122)		(0.111)		(0.128)	
Cultural Distance			0.122				0.173	
			(0.323)				(0.334)	
Knowledge Distance			2.849	**			1.899	*
			(1.428)				(1.535)	
Economic Distance			-4.074				-5.782	
			(4.505)				(4.664)	
Financial Distance			5.712	*			17.302	**
			(3.165)				(6.807)	
Common Law			-1.525				-4.380	
			(1.429)				(1.990)	
Scandinavian Civil			1.024				3.052	
			(2.665)				(3.060)	
French Civil			1.105				3.299	
			(1.322)				(1.974)	
German Civil			-3.594	**			-4.717	
			(1.563)				(1.850)	
Political Distance			-0.033				-0.075	
			(0.162)				(0.165)	
Demographic Distance			-1.898				-2.223	
			(13.632)				(13.941)	
Fixed Effect	Yes		Yes		Yes		Yes	
Year Dummy	Yes		Yes		Yes		Yes	
N	325		284		306		269	
Adj. R^2	0.416		0.429		0.355		0.382	

Table 8 Robustness Test: Yield Spread Regression using Mahalanobis (Berry et al. 2010) Measurements

Table 8 presents the robustness regression results of yield spread against Mahalanobis distance measures with controls for bond issue-specific variables. Dependent variable is yield spread. We followed Berry et al. (2010) and used Mahalanobis distance measures instead of Euclidean distance. This helps to overcome the methodological limitations of the Euclidean approach which is scale invariant and takes into consideration the variance–covariance matrix. Columns (1) – (8) reports coefficient estimates from individual distance measures. Column (9) reports coefficient estimates which include all distance measures with the whole sample. To remove the "US effect", column (10) reports coefficient estimates which include all distance measures with only the non-US issued foreign bonds. Log (Maturity) is the natural log of issue's maturity in months; Issue Size is bond issue's principal value (in thousands $); Coupon Rate is Coupon rate in Percentage; S&P Rating is the S&P's numeric rating, the higher the number, the lower the rating; Yield to Maturity is annualized rate of return anticipated on a bond if held until end of its maturity, measured in Percentage. Treasury Yield is the interest rate, measured in percentage, which the government pays to borrow money by issuing the government's debt for different lengths of time. Yield Spread is difference between yield spread and treasury yield of the same maturity. Frequency of Issuance is dummy variable with assigned value of 1 if the bond issuer frequently issue foreign bond in the foreign bond market nation and 0 otherwise. All distance measures, including Cultural Distance, Knowledge Distance, Economic Distance, Financial Distance, Legal Distance, Political Distance, and Demographic Distance are same as defined in Tables 3 & 4. Standard errors are shown in parentheses. *, **, *** indicates statistical significance at the 10%, 5%, and 1% levels, respectively. The definitions of each variable and numeric ratings are described in Table 1 and Appendix 1 respectively.

	Dependent Variable: Yield Spread in Percentage																			
	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)		(10)	
Intercept	-2.594	*	-1.770	***	-1.228	***	-1.380	*	-0.916	*	-0.886	***	-1.375	***	-1.655		-0.996		-1.072	
	(0.698)		(0.606)		(0.489)		(0.799)		(0.540)		(0.658)		(0.499)		(0.506)		(1.284)		(1.298)	
log (Maturity)	0.091		0.053		0.066		0.058		0.069		0.044		0.082		0.078		0.099		0.119	
	(0.083)		(0.082)		(0.082)		(0.084)		(0.078)		(0.081)		(0.082)		(0.081)		(0.086)		(0.088)	
Issue Size	-0.017		0.059		0.054		0.118		-0.060		0.056		0.071		0.046		-0.040		-0.013	
	(0.189)		(0.187)		(0.184)		(0.188)		(0.171)		(0.183)		(0.184)		(0.182)		(0.195)		(0.201)	
Coupon Rate	0.222	***	0.203	***	0.211	***	0.204	***	0.202	***	0.210	***	0.213	***	0.213	***	0.196	***	0.190	***
	(0.025)		(0.024)		(0.024)		(0.024)		(0.024)		(0.024)		(0.024)		(0.024)		(0.026)		(0.026)	
Treasury Yield	-0.133	***	-0.156	***	-0.141	***	-0.113	**	-0.128	***	-0.129	***	-0.114	**	-0.139	***	-0.201	***	-0.240	***
	(0.048)		(0.049)		(0.046)		(0.048)		(0.045)		(0.046)		(0.048)		(0.046)		(0.056)		(0.059)	
Frequency of Issue	-0.148		-0.185	*	-0.197	**	-0.211	**	-0.207	**	-0.202	**	-0.210	**	-0.151		-0.068		-0.066	
	(0.109)		(0.107)		(0.104)		(0.106)		(0.099)		(0.104)		(0.103)		(0.104)		(0.112)		(0.113)	
S&P Rating	0.376	***	0.378	***	0.375	***	0.373	***	0.382	***	0.374	***	0.376	***	0.384	***	0.386	***	0.392	***
	(0.016)		(0.015)		(0.015)		(0.015)		(0.015)		(0.015)		(0.015)		(0.015)		(0.017)		(0.017)	
Cultural Distance	0.019	***															-0.006		-0.003	
	(0.006)																(0.010)		(0.010)	
Knowledge Distance			0.013	*													0.040	***	0.031	**
			(0.008)														(0.013)		(0.014)	
Economic Distance					0.009												0.018		0.016	
					(0.007)												(0.012)		(0.012)	
Financial Distance							0.023	*									0.002		-0.006	
							-0.014										(0.020)		(0.021)	
Common Law									0.891	***							1.346	***	1.499	***
									(0.163)								(0.263)		(0.276)	
Scandinavian Civil									-0.949	***							-1.385	***	-1.537	***
									(0.330)								(0.378)		(0.390)	
French Civil									-0.726	***							-1.284	***	-1.396	***
									(0.162)								(0.255)		(0.265)	
German Civil									-0.441	**							-0.483	**	-0.509	**
									(0.183)								(0.024)		(0.254)	
Political Distance											0.000						0.000		0.000	
											(0.000)						(0.000)		(0.000)	
Demographic Distance													0.023	**			-0.010		-0.009	
													(0.012)				(0.019)		(0.020)	
Geographic Distance															0.000	***	0.000		0.000	
															0.000		(0.000)		(0.000)	
Fixed Effect	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes	
Year Dummy	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes	
N	509		525		546		525		564		544		545		546		398		385	
Adj. R^2	0.781		0.781		0.778		0.779		0.792		0.780		0.778		0.782		0.795		0.792	

Table 9 Robustness Test:
Underwriting Costs Regression using Mahalanobis (Berry et al. 2010) Measurements

Table 9 presents the regression results of transaction cost against Mahalanobis distance measures with controls for bond issue-specific variables. Total underwriting fee is composed of selling concession fee, management fee, and underwriting fee. Among these, selling concession is a major component of total underwriting fee. We followed Berry et al. (2010) and used Mahalanobis distance measures instead of Euclidean distance. This helps to overcome the methodological limitations of the Euclidean approach which is scale invariant and takes into consideration the variance–covariance matrix. Columns (1) and (2) report the selling concession and total underwriting fee regressions on distance variables with the whole sample; columns (3) and (4) report the selling concession and total underwriting fee regressions on distance variables with the non-US issued foreign bond samples only. Log (Maturity) is the natural log of issue's maturity in months; Issue Size is bond issue's principal value (in thousands $); Coupon Rate is Coupon rate in Percentage; S&P Rating is the S&P's numeric rating, the higher the number, the lower the rating; Yield to Maturity is annualized rate of return anticipated on a bond if held until end of its maturity, measured in Percentage. Treasury Yield is the interest rate, measured in percentage, which the government pays to borrow money by issuing the government's debt for different lengths of time. Yield Spread is difference between yield spread and treasury yield of the same maturity. Frequency of Issuance is dummy variable with assigned value of 1 if the bond issuer frequently issue foreign bond in the foreign bond market nation and 0 otherwise. All distance measures, including Cultural Distance, Knowledge Distance, Economic Distance, Financial Distance, Political Distance, Demographic Distance, and legal system variables are same as defined in Tables 3 & 4. Standard errors are shown in parentheses. *, **, *** indicates statistical significance at the 10%, 5%, and 1% levels, respectively. The definitions of each variable and numeric ratings are described in Table 1 and Appendix 1 respectively.

Dependent Variable: Total Underwriting Fee				
	(1) Whole Sample		**(2) Non-US Issued Foreign Bonds**	
Intercept	-5.338		-5.280	
	(7.159)		(7.650)	
log (Maturity)	1.217	**	1.140	*
	(0.606)		(0.638)	
Issue Size	-0.623		-1.137	
	(1.263)		(1.374)	
Coupon Rate	0.183		0.220	
	(0.212)		(0.220)	
Treasury Yield	0.347		0.534	
	(0.473)		(0.519)	
Frequency of Issue	-2.285	***	-2.274	***
	(0.738)		(0.763)	
S&P Rating	0.016		0.002	
	(0.128)		(0.132)	
Culture Distance	0.061		0.068	
	(0.061)		(0.067)	
Knowledge Distance	-0.037		-0.003	
	(0.097)		(0.115)	
Economic Distance	0.532	***	0.567	***
	(0.166)		(0.179)	
Financial Distance	-0.155		-0.113	
	(0.144)		(0.151)	
Common Law	-1.051		-2.247	
			(1.948)	
Scandinavian Civil	1.230		2.120	
	(2.176)		(2.303)	
French Civil	-0.669		-0.024	
	(1.580)		(1.680)	
German Civil	-0.378		-0.573	
	(1.231)		(1.560)	
Political Distance	0.001		0.001	
	(0.001)		(0.001)	
Demographic Distance	-0.129		-0.088	
	(0.136)		(0.173)	
Geographic Distance	0.000		0.000	
	(0.000)		(0.000)	
Fixed Effect	Yes		Yes	
Year Dummy	Yes		Yes	
N	212		199	
Adj. R^2	0.457		0.407	

Table 10 Robustness Test: Yield Spread Regression on Eurobond Samples

Table 11 presents the regression results of yield spread against distance measures of Eurobonds with controls for bond issue-specific variables. Dependent variable is yield spread. Columns (1) reports the baseline model without adding the distance measures. Columns (2) – (6) reports coefficient estimates from individual distance measures. Column (7) report coefficient estimates which include all distance measures with the whole sample. To remove the "US effect", column (8) report coefficient estimates which include all distance measures with only the non-US issued foreign bonds. log (Maturity) is the natural log of issue's maturity in months; Issue Size is bond issue's principal value (in thousands $); Coupon Rate is Coupon rate in Percentage; S&P Rating is the S&P's numeric rating, the higher the number, the lower the rating; Yield to Maturity is annualized rate of return anticipated on a bond if held until end of its maturity, measured in Percentage. Treasury Yield is the interest rate, measured in percentage, which the government pays to borrow money by issuing the government's debt for different lengths of time. Yield Spread is difference between yield spread and treasury yield of the same maturity. Frequency of Issuance is dummy variable with assigned value of 1 if the bond issuer frequently issue foreign bond in the foreign bond market nation and 0 otherwise. All distance measures, including Cultural Distance, Knowledge Distance, Economic Distance, Financial Distance, Political Distance, Demographic Distance, and legal system variables are same as defined in Tables 3 & 4. Standard errors are shown in parentheses. *, **, *** indicates statistical significance at the 10%, 5%, and 1% levels, respectively. The definitions of each variable and numeric ratings are described in Table 1 and Appendix 1 respectively.

Dependent Variable: Yield Spread in Percentage														
	(1)		**(2)**		**(3)**		**(4)**		**(5)**		**(6) Whole Sample**		**(7) Non-U.S. Issuance**	
Intercept	-1.130	***	-1.912	***	-1.291	***	-1.237	***	-0.956	***	-0.948	***	-1.112	***
	(0.092)		(0.288)		(0.138)		(0.139)		(0.123)		(0.321)		(0.363)	
log (Maturity)	0.061	***	0.183	***	0.041		0.041		0.062	***	0.060		0.052	
	(0.017)		(0.045)		(0.027)		(0.027)		(0.023)		(0.053)		(0.061)	
Issue Size	0.044	***	-0.045		0.055	**	0.052	*	0.055	**	-0.109	**	-0.122	*
	(0.016)		(0.053)		(0.027)		(0.028)		(0.023)		(0.057)		(0.068)	
Coupon Rate	0.613	***	0.616	***	0.686	***	0.685	***	0.795	***	0.745	***	0.727	***
	(0.009)		(0.020)		(0.012)		(0.012)		(0.011)		(0.028)		(0.032)	
Treasury Yield	-0.455	***	-0.371	***	-0.414	***	-0.412	***	-0.658	***	-0.548	***	-0.517	***
	(0.011)		(0.021)		(0.013)		(0.013)		(0.015)		(0.032)			
Frequency of Issue	-0.084	***	0.023		-0.090	**	-0.095	**	-0.084	**	0.055	***	0.097	
	(0.032)		(0.067)		(0.044)		(0.044)		(0.040)		(0.080)		(0.091)	
S&P Rating	0.155	***	0.181	***	0.150	***	0.150	***	0.100	***	0.123		0.134	***
	(0.004)		(0.010)		(0.006)		(0.006)		(0.005)		(0.013)		(0.014)	
Cultural Distance			0.001								0.001		0.002	
			(0.002)								(0.003)		(0.003)	
Knowledge Distance					0.001						-0.004		0.004	
					(0.002)						(0.004)		(0.006)	
Economic Distance							-0.002	*			-0.004		-0.003	
							(0.001)				(0.002)		(0.003)	
Financial Distance									0.003		0.001		-0.003	
									(0.002)		(0.007)		(0.009)	
Connected Distance											0.007		0.019	
											(0.028)		(0.032)	
Fixed Effect	Yes		Yes		Yes		Yes		Yes		Yes		Yes	
Year Dummy	Yes		Yes		Yes		Yes		Yes		Yes		Yes	
N	4218		950		2381		2374		2111		553		470	
Adj. R^2	0.834		0.872		0.860		0.859		0.890		0.832		0.824	

Appendix 1
S&P and Moody's Numerical vs. Letter Ratings

Numerical Rating	S&P Rating	Moody's Rating
1	AAA	Aaa
2	AA+	Aa1
3	AA	Aa2
4	AA-	Aa3
5	A+	A1
6	A	A2
7	A-	A3
8	BBB+	Baa1
9	BBB	Baa2
10	BBB-	Baa3
11	BB+	Ba1
12	BB	Ba2
13	BB-	Ba3
14	B+	B1
15	B	B2
16	B-	B3
17	CCC+	Caa1
18	CCC	Caa2
19	CCC-	Caa3
20	CC	Ca
21	C	C